SECTION 02 41 13

SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Specifications for the demolition and removal of structures, including backfilling of resultant excavations and depressions, as indicated.

B. Extent of demolition work shall be as follows:

1. Carpet and gypsum board walls to be completely removed to the base of the foundation.

C. Restoration of existing surfaces and finishes to remain in place which are damaged by demolition and removal operations.

1.2 RELATED SECTIONS

A. Section 01 50 00 - Temporary Facilities and Controls.

1.3 REFERENCES

A. American National Standards Institute (ANSI): ANSI A10.6 - Safety Requirements for Demolition Operations.

B. California Code of Regulations (CCR):

1. CCR Title 8, Chapter 4, Subchapter 4 - Construction Safety Orders.

2. CCR Title 24, Part 2, California Building Code, Chapter 33, Section 3303, Protection of Pedestrians during Construction or Demolition.

1.4 SUBMITTALS

A. Demolition Plan: Submit a comprehensive demolition plan, describing the proposed sequence, methods, and equipment for demolition, removal, and disposal. Do not proceed with demolition until the Owner has approved the demolition plan.

B. Shop Drawings: Indicate stages or phases of the demolition work.

1.5 SITE CONDITIONS

A. Erect and maintain temporary bracing, shoring, lights, barricades, signs, and other

measures as necessary to protect the public, workers, and adjoining property from damage from demolition work, all in accordance with applicable codes and regulations.

B. Protect utilities and facilities from damage.

C. Do not disconnect or shut down any part of the existing utilities and services, except by written permission of the Project Manager or Facilities Manager. Submit schedule of estimated shut-down times 72 hours in advance of shut-down in order to obtain such permission.

D. Noise and Dust Abatement: Comply with requirements specified in Section 01 50 00, Temporary Facilities and Controls. In addition, provide continuous noise and dust abatement as required to prevent disturbance and nuisance to the public and workers and to the occupants of the surrounding areas.

E. The Contract Documents and related documents may not represent all surface conditions at the site and adjoining areas. The known surface conditions are as indicated, and shall be compared with actual conditions before commencement of work.

F. If existing active services encountered are not indicated or otherwise made known to the Contractor and interfere with the permanent facilities under construction, notify the Architect in writing, requesting instructions on their disposition. Take immediate steps to ensure that the service provided is not interrupted, and do not proceed with the work until written instructions are received from the Owner.

PART 2 PRODUCTS

2.1 MATERIALS, EQUIPMENT AND FACILITIES

A. Furnish all materials, tools, equipment, devices, appurtenances, facilities, and services as required for performing the demolition and removal work.

PART 3 EXECUTION

3.1 DEMOLITION

A. Perform demolition in accordance with the approved Demolition Plan.

B. Operational procedures shall be in accordance with the approved Demolition Plan.

3.2 RESTORATION OF EXISTING STRUCTURES AND FACILITIES

A. All damage to existing facilities, including utilities, which are to remain in place, shall be repaired to a condition equal to that existing prior to the beginning of demolition and removal operations. The cost of repairing existing structures and facilities damaged by the Contractor's operations shall be at the Contractor's expense.

3.3 CLEANUP

A. Provide a clean and orderly site.

END OF SECTION

SECTION 05 40 00

COLD FORMED METAL FRAMING

PART 1 GENERAL

1.1 SUMMARY

A. All labor, materials, equipment and services required for installation of all lightweight metal framing included but not limited to:

B. Metal stud partitions, including studs, tracks, bridging and backing for other trades.

C. Lightweight metal joist systems.

D. Lightweight metal framing.

E. Cooperation with other trades for installation of backing and bridging for support of items installed by those trades.

1.2 QUALITY ASSURANCE

A. All work shall conform to the 2001 California Building Code, Title 24, Part 2.

B. Welders qualified per AWS D.1.

C. Conform to the Specifications for the Design of Cold-Formed Steel Structural Members, American Iron and Steel Institute.

D. All stud and joist systems shall conform to Steel Stud Manufacturers Association, ICC-ES approval ER-4943P.

1.3 REFERENCES

A. ASTM A 446, Steel Sheet, Zinc Coated by the Hot Dip process.

B. ASTM A 570, Hot-Rolled Carbon Steel Sheet and Strip.

1.4 SUBMITTAL

A. Submit shop drawings in accordance with Section 01 33 00.

B. Shop drawings shall show shop and assembly details, type and locations of connections, bracing and backing.

C. Erection instructions.

D. Manufacturer's certification that materials meet specification requirements.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers conforming to SSMA ICC-ES Report ER-4943P.

B. Specific product designations on the drawings and in the specifications refer to SSMA designations or The Steel Network metal framing products.

2.2 MATERIALS

A. Light gage shapes shall be fabricated from sheet steel complying with ASTM A653, having Fy = 50 ksi for thickness of 54 mils (16 ga.) and more, and 33 ksi for steel thickness less than 54 mils (18 ga. and thinner).

B. 6" metal studs shall be 600S162-54 studs.

C. 6" metal track shall be 600T150-54 track.

D. Hat channels shall be 1" (7/8") x 20 ga. (33 mils)

E. Connectors and accessories shall be as shown on the drawings. Welding rod shall be 3/32" or 1/8" AWS type 6013 or 7014.

F. Screws shall be pan head self-tapping. Size per drawings.

PART 3 ERECTION

3.1 ERECTION

A. Erect cold formed metal framing in accordance with Manufacturers instructions.

B. Prefabricated panels shall be square and braced against racking.

C. Fastening of components shall be by welding, bolting or screwing. Wire tying will not be permitted.

D. Tracks shall be securely anchored to the supporting structure. Anchorage shall be by welding, bolting, or power driven fasteners at 24" o.c.

E. Studs shall be seated squarely in track and shall bear upon the web of the track. The studs shall be plumbed, aligned and squarely attached to the flanges of the tracks.

F. Bridging shall be installed in accordance with the Manufacturer's recommendations.

G. All field abrasions to members from cutting or welding shall be touched-up with a zinc paint or primer.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Miscellaneous metal and fabricated ferrous metal items, galvanized and prime painted.

B. Associated manufactured items.

C. Accessories.

1.2 RELATED SECTIONS

A. Section 09 90 00 -Interior Painting: Field painting of metal fabrications.

B. Other metal items are specifically called for and described in other sections.

1.3 REFERENCES

A. ASTM A36 - Structural Steel.

B. ASTM A53 - Hot-Dipped, Zinc-Coated Welded and Seamless Steel Pipe.

C. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

D. ASTM A153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

E. ASTM A283 - Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and Bars.

F. ASTM A307 - Low-Carbon Steel Externally and Internally Threaded Fasteners.

G. ASTM A366 - Steel, Carbon, Cold Rolled Sheet, Commercial Quality.

H. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

I. ASTM B221 - Aluminum Alloy Extruded Bars, Rods, Wire, Shapes and Tubes.

J. AWS D1.1 - Structural Welding Code.

K. AWS D2.0 - Welding Symbols.

L. FS FF-S-325 - Shield, Expansion, Nail, Expansion and Nail, Drive Screw (Devices, Anchoring, Masonry).

M. SSPC - Steel Structures Painting Council "Steel Structures Painting Manual."

1.4 SUBMITTALS

A. Shop Drawings: Indicate materials, finishes, locations, sizes, profiles, attached hardware and fittings, reinforcing, anchorage, size and type of fasteners and details of fabricated metal work.

1. Include erection drawings, elevations and details showing cuts, copes, connections holes, threaded fasteners and welds.

2. Indicate welded connections using symbols conforming to AWS D2.0. Indicate shop and field welds with net weld lengths.

3. Indicate size and location of welded connectors, concrete inserts or masonry inserts where connectors or inserts are required to receive work.

B. Product Data: Submit manufacturer's data for manufactured items and accessories.

C. Samples:

1. Galvanized Fabrications: Submit samples, minimum 3 x 3 inches in size, illustrating each type of zinc coating specified.

D. Welders' Certificates: Certify welders employed on the work have passed AWS qualification tests within the previous 12 months.

1.5 QUALIFICATIONS

A. Welders: Personnel qualified in accordance with AWS D1.1 within previous 12 months.

1.6 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

1.7 COORDINATION

A. Coordinate fabrication of welded steel fabrication.

PART 2 PRODUCTS

2.1 MATERIALS

A. Steel Sections: ASTM A36.

B. Steel Plates and Bars: ASTM A283.

C. Steel Tubing: ASTM A500, Grade B.

D. Steel Pipe: ASTM A53, Grade B, Schedule 40.

E. Sheet Steel: ASTM A366, cold rolled sheet steel; 24 gauge minimum thickness.

F. Aluminum Tubing and Angles: ASTM B221, 6061 alloy, T5 temper.

2.2 ACCESSORIES

A. Bolts, Nuts, and Washers: ASTM A307; no upset threads permitted.

B. Expansion Bolts: FS FF-S-325, Group II, Type 4, Class 1; zinc plated carbon steel; stud type expansion anchor with single piece wedge; Hilti, Inc. "Kwik Bolt III" Expansion Anchor, or "Kwik Bolt" TZ Expansion Anchor in cracked concrete, ITW Ramset/ Red Head "Trubolt" Wedge Anchor or equal product substituted under provisions of Section 01 60 00

C. Welding Materials: AWS D1.1; type required for materials being welded.

D. Welded Stud Connectors: Shear type connectors in compliance with AWS D1.1-86; Nelson Studs; size as indicated on Drawings.

E. Shop and Touch-Up Primer: SSPC 15, Type I; red oxide.

F. Touch-up Primer for Galvanized Surfaces: SSPC 20, Type I; inorganic; zinc rich.

2.3 FABRICATION

A. Fabricate items true to shape, size and tolerances indicated on Drawings and on final reviewed shop drawings with shearing, punching, bending, forming and other operations necessary to complete work.

B. Fit and shop assemble items in largest practical sections for delivery to site.

C. Fabricate unites complete or in largest practical sections before galvanizing.

D. Fabricate anchorage and related components of same material and finish as metal fabrication, except where specifically noted otherwise.

1. Provide anchors, bolts, and miscellaneous fasteners necessary to fasten work in place.

2. Provide miscellaneous fasteners, brackets and framing as indicated or as necessary to complete installation.

E. Fabricate items with joints tightly fitted and secured. Make exposed joints butted tight, flush and hairline.

F. Fabricate items with straight lines, square corners or smooth bends and free from twists, kinks, warps, dents and other imperfections.

1. Straighten work bent by shearing or bunching.

2. Provide smooth finish and well-defined lines and arises on exposed surfaces of completed work.

G. Form assemblies.

1. Fabricate items in manner that will provide for expansion and contraction, prevent shearing of fasteners, ensure rigidity and provide close fitting of sections.

2. Provide gauge and assembly to ensure sufficient strength to prevent distortion during shipping, handling, installing and under severe service conditions.

3. Prepare items to receive hardware; ensure components are properly detailed and have proper clearances.

4. Drill holes for bolts and screws. Conceal fasteners where possible.

5. Dress exposed edges smooth; ease to small uniform radius.

H. Perform shop welding in accordance with applicable requirements of AWS D1.1.

1. Weld interior permanent connections in ferrous metal items unless indicated otherwise.

2. Fully weld pipe joints in welded downspout assemblies.

3. Weld behind finishes surfaces wherever possible.

4. Grind exposed welds smooth and flush with adjacent finished surfaces.

5. Remove welding spatter, flux, slag and oxides from finished surfaces.

I. Complete provisions for bolted, screwed and riveted connections in shop unless otherwise indicated.

1. Evenly space exposed heads.

2. Bolts:

a. Countersink bolt heads; finish smooth and flush.

b. Provide washers under heads and nuts bearing on wood.

c. Use beveled washers where bearing is on sloped surfaces.

d. Draw nuts tight; prevent loosening of permanent connections by nicking threads.

3. Screws: Use flat head type screws. Countersink; fill screw slots and finish smooth and flush.

4. Rivets: Center and countersink heads; machine-drive tight and finish flush and smooth.

2.4 FINISH

A. Clean surfaces of rust, scale, dirt, grease, and foreign matter prior to finishing.

1. Where hand cleaning methods are not adequate, clean in accordance with SSPC-SP1, SSPC-SP2, SSPC-SP-6 or SSPC-SP7 as required.

2. Completely remove burrs, rough spots and pitting from normally exposed ferrous metal items.

B. Painting:

1. Do not prime surfaces in direct contact bond with concrete and where field welding is required.

2. Apply prime paint materials in accordance with paint manufacturer's instructions and recommendations.

3. Permit thorough drying before shipment.

4. Spot paint abrasions and field connections after assembly.

5. Galvanizing Repair: Apply to minimum 2 mil dry film thickness.

6. Prime Paint: Apply to minimum 1.5 mil dry film thickness.

7. Protective Back Coating for Protection of Dissimilar Materials: Apply to minimum 15 mil dry film thickness.

C. Galvanizing:

1. Hot-dip galvanize products after fabrication in accordance with ASTM A123 or ASTM A153 as applicable.

2. Mark products with name of galvanizer, applicable ASTM designation and weight of zinc coating.

3. Galvanize fabricated items complete or in largest practicable sections.

4. Galvanize to the following minimum weights:

a. Items totally concealed from view: Minimum 2.0 oz/ square foot.

b. Items exposed to view: Minimum 1.1 oz/square foot.

5. Wash-prime galvanized items to be painted within six hours of galvanizing.

6. Touch-up galvanized items with specified primer.

D. Finish Schedule:

1. Interior Ferrous Metal Items:

a. Concealed: Clean, chemically etch and shop-apply one coat primer.

b. Exposed: Clean, treat with hot phosphate, chemically etch and shop-apply one coat primer.

2. Exterior Ferrous Metal Items:

a. Concealed: Clean and hot-dip galvanize to specified standards.

b. Exposed: Clean, hot-dip galvanize to specified standards, chemically etch and shop-apply one coat primer.

3. Hardware Including Fasteners: Finish to match item fastened.

2.5 SOURCE LABORATORY CONTROL

A. Provide free access to work at all times and cooperate with inspectors and laboratory personnel.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Verify that setting conditions and dimensions are correct.

C. Verify that solid blocking and backing has been provided at framed and furred conditions.

D. Do not begin installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Obtain Architect's authorization prior to site cutting and making adjustments not scheduled.

B. Clean and strip site primed steel items to bare metal where site welding is scheduled.

C. Make provision for erection loads with temporary bracing. Keep work in alignment.

D. Supply items required to be cast into concrete with setting templates to appropriate sections.

3.3 INSTALLATION

A. Install metal fabrications as indicated on Drawings and final reviewed shop drawings.

B. Install items plumb and level, accurately fitted, free from distortion or defects.

C. Perform field welding only where indicated on final reviewed shop drawings in accordance with AWS D1.1.

D. Install anchors and fasteners of sizes, types and spacings indicated and as required to fasten work rigidly in place.

1. Embed anchors in concrete as work progresses.

2. Do not cinch fastenings through finish alone without spacer washers.

3. Install concrete inserts or pre-drilled expansion bolts for fastening items into concrete.

4. Fasten work tightly to prevent rattle or vibration except where expansion and contraction tolerances are required.

E. Set frames, plates, sills, bolts and similar items on non-shrink grout mixed in accordance with manufacturer's instructions.

3.4 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed by either the Owner's Testing Laboratory or an independent testing laboratory selected by Owner.

B. Provide free access to work at all times and cooperate with inspectors and laboratory personnel.

C. The Owner's Testing Laboratory or independent testing laboratory will:

1. Continuously inspect welding of load bearing fabrications in field.

2. Ultrasonically test full penetration welds of load bearing fabrications.

3.5 ADJUSTING

A. After installation, touch-up field welds, scratched and damaged surfaces with primer.

3.6 CLEANING

A. Remove weld spatter, excess sealant, dirt and other foreign materials from metal fabrications.

B. Remove machining oil, silicone and other foreign materials from surfaces of galvanized steel and stainless steel manufactured items.

C. Perform cleaning with materials and methods that will not damage finish.

3.7 PROTECTION OF INSTALLED WORK

A. Protect work of this section from defacement or damage to profile, shape or finish until final acceptance.

3.8 SCHEDULE

A. Provide and install items listed in schedule and shown on Drawings with anchorage and attachments necessary for installation.

B. The schedule is a list of principal items only. Refer to Drawing details for items not specifically scheduled.

C. Support posts and beams.

END OF SECTION

SECTION 06 40 00

ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Special fabricated hardwood veneer faced wood cabinet.

B. Cabinet hardware and accessories.

C. Shop finish.

D. Mock-Up: Provide mock-up; section 3'-0" ± in width and approximately 8'-0" ± in height that would include the positioning at the counter to the cabinet back wall. Include the area which has cutouts for the keyboard, undercounter monitor, and EZ access controls. The full size mock-up could be made out of particle board or MDS and wood elements to replicate the metal supports.

1.2 PRODUCTS INSTALLED BUT NOT SUPPLIED UNDER THIS SECTION

A. Section 08 81 00 - Glass and Glazing.

B. Section 26 00 00 - Electrical.

1.3 RELATED SECTIONS

A. Section 05 40 00 - Cold Formed Metal Framing: Metal stud framing and backing plates for casework.

1.4 REFERENCES

A. ANSI A135.4 - Basic Hardboard.

B. ANSI A156.9 - Cabinet Hardware.

C. ANSI A208.1 - Mat Formed Wood Particleboard.

D. ANSI A208.2 - Medium Density Fiberboard for Interior Use.

E. CBC - California Building Code, 2001 edition.

F. HPVA HP-1 - Standard for Hardwood and Decorative Plywood.

G. NHLA - National Hardwood Lumber Association.

H. PS 20 - American Softwood Lumber Standard.

I. WI - Woodwork Institute "Manual of Millwork."

1.5 DEFINITIONS

A. Exposed Portions:

1. All visible surfaces.

2. Visible front edges of frames, ends, divisions, tops and shelves.

3. Interior faces of hinged doors.

4. Visible surfaces in open cabinets or behind glass.

B. Semi-Exposed Portions:

1. Shelves.

2. Divisions.

3. Interior face of ends, backs and bottoms.

4. Interior surfaces of cabinet top members above finished floor.

5. Drawer sides, subfronts, backs and bottoms.

6. The underside of bottoms of cabinets.

C. Concealed Portions:

1. Toe space unless otherwise specified.

2. Sleepers.

3. Web frames, stretchers, and solid sub-tops.

4. Underside of bottoms of cabinets.

5. The three non-visible edges of adjustable shelves.

6. The underside of counters.

1.6 DESIGN REQUIREMENTS

A. Species, cut, grade and color of hardwood veneers provided for wood cabinets to match existing design and species.

B. Factory finish and sheen provided for wood cabinets, existing cabinets, finishes and sheen.

1.7 PERFORMANCE REQUIREMENTS

A. Adjustable shelves shall support 40 lbs/sq ft uniformly dispersed applied load with deflection limited to L/144.

1.8 SUBMITTALS

A. Shop Drawings: Include minimum requirements per WI Section 1. The first sheet of the shop drawings shall bear the WI Certified Compliance label.

B. Product Data: For each type of wood and product indicated, including cabinet hardware and accessories and finishing materials and process.

C. Samples:

1. Submit samples, minimum 12 x 12 inches in size, illustrating color, pattern, and finish of hardwood veneer specified.

D. Test Reports: Submit test reports for cabinets and connections verifying cabinets and connections support loads. Reports for tests conducted for the fabricator or for WI for the exact method of cabinet construction are acceptable.

E. Certificates: Submit WI Certified Compliance Certificates for transparent-finish wood cabinets.

1. For Material and Workmanship: Submit prior to delivery of casework to site.

2. For Installation: Submit upon completion of work of this section.

1.9 QUALITY ASSURANCE

A. Perform work in accordance with Premium Grade of Woodwork Institute "Manual of Millwork," except where specified otherwise.

B. Provide WI certifications for material, fabrication and installation. Affix WI Certified Compliance Label to each elevation of casework.

1.10 QUALIFICATIONS

A. Fabricator: Company specializing in the fabrication of transparent-finish wood cabinets able to demonstrate successful experience with work of comparable extent, complexity and quality to that shown and specified.

B. Installer: Company specializing in the installation of institutional casework with minimum 3 years documented experience.

1.11 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site, store, handle and protect in accordance with fabricator's instructions and recommendations.

B. Do not deliver cabinets until project is ready for cabinet installation and proper facilities are available for handling, sorting and protecting cabinets and related materials.

C. Store cabinets in clean, well-ventilated area protected from direct sunlight, excessive heat, rain or moisture and with:

1. Relative humidity between 45 and 65 percent at 60 to 90 degrees F.

2. Equilibrium Moisture Content conditions between 8 and 12 percent.

D. Set or store cabinets on level floor; provide temporary covers to protect exposed finished portions from damage. Do not use cabinets to store construction materials.

E. Store cabinets in installation areas or in areas with same ambient conditions as area of installation for minimum 72 hours prior to installation.

1.12 ENVIRONMENTAL REQUIREMENTS

A. Maintain required temperature and humidity in installation areas from date of delivery through remainder of construction.

1.13 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

B. Verify details and dimensions of equipment and fixtures integral with casework and other items for proper fit and accurate alignment.

1.14 SEQUENCING AND SCHEDULING

A. Provide information as required for timely and proper placement of backing and support items.

B. Coordinate details with other work supporting, adjoining or fastening to casework.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Softwood Lumber: PS 20; graded in accordance with WI; minimum moisture content of 6 percent; maximum moisture content of 12 percent; Douglas Fir, Ponderosa or Sugar Pine; Premium Grade.

B. Hardwood Lumber: NHLA; graded in accordance with WI; minimum moisture content of 6 percent; maximum moisture content of 12 percent.

1. Concealed Locations: Ash, Maple or Birch; WI Premium Grade.

2.2 SHEET WOOD MATERIALS

A. Hardwood Veneer: HPVA HP-1, AA Grade; selected, plain sliced, figured European Ash. Provide leaves a minimum of 15 inches wide x 10 feet long.

B. Wood Particleboard: ANSI A208.1, Grade 1-M-3.

C. Medium Density Fiberboard: ANSI A208.2; minimum 45 lbs/cu ft.

D. Hardboard: ANSI A135.4; pressed wood fiber with resin binder; tempered grade, smooth two sides.

2.3 ACCESSORIES

A. Adhesives: WI Type II to suit application.

B. Fasteners:

1. Bolts, Nuts, Washers, Lags, Pins and Screws: Of size and type to suit application; plain finish in concealed and exposed locations.

2. Powder Driven Fasteners: Tempered steel pins with special corrosion-resistant plating or coating; guide washers to control penetration accurately to 1-1/4 inch low velocity piston-driven powder-actuated tool; Hilti Fastening Systems, Impex Tool Corporation, or equal product substituted under provisions of Section 01 60 00.

3. Concealed Joint Fasteners: Threaded steel.

C. Primer: Alkyd primer sealer type.

2.4 HARDWARE

A. Shelf Rests for Adjustable Shelves: Zinc alloy; Knape & Vogt 255 pilasters and clips.

B. Hinges:

1. Swinging Door: Stainless steel piano hinge.

C. Door Silencers: Clear molded polyurethane cylindrical bumpers; adhesive backed with peel-off liner; resilient; skid, crack and abrasion resistant; non-marring; 0.50 inch diameter x 0.14 inches high.

D. Substitutions: Under provisions of Section 01 60 00.

2.5 FABRICATION

A. Fabricate hardwood veneer faced wood cabinets in accordance with WI Section 14, Premium Grade, Type I, Style A with Type I inset flush style doors and drawer fronts, except as amended by these specifications.

B. Fabricate as fixed and movable freestanding units as indicated on Drawings.

C. Minimum Nominal Thickness and Material for Cabinet Components:

1. Cabinet Backs: Minimum 3/4 inch thick particleboard or medium density fiberboard core.

2. Cabinet Tops, Bottoms, Ends, and Divisions: Minimum 3/4 inch thick particle or medium density fiberboard core.

D. Apply hardwood veneer to exposed and semi-exposed horizontal and vertical surfaces.

1. Matching Between Individual Veneer Pieces: Slip match.

E. Self-edge exposed and semi-exposed edges.

1. Apply solid stock hardwood strips to edges of doors and drawer fronts, to visible edges of web frames, divisions and tops and to front edges of shelves.

2. Use full length pieces only.

F. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

G. Provide cutouts for inserts, outlet boxes and other fixtures and fittings.

2.6 FINISHING

A. Back prime concealed wood surfaces in contact with cementitious materials.

B. Apply shop finish to hardwood surfaces in accordance with WI Section 5, System 4 - Conversion Varnish, Premium Grade.

1. First Coat: Oil based stain.

2. Second Coat: Sanding sealer.

3. Third Coat: Top coat of conversion varnish.

4. Fourth Coat: Top coat of conversion varnish.

5. Fifth Coat: Top coat of conversion varnish.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify that mechanical, electrical and building items affecting work of this section have been installed and properly located.

C. Verify that locks supplied under Section TI-08710 have been delivered in correct quantity and are of correct characteristics.

D. Do not begin installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Set and secure fixed casework in place rigid, plumb, and level in accordance with WI Section 14, Premium Grade. Set movable freestanding casework in place plumb and level.

B. Use purpose designed fixture attachments at concealed locations for wall mounted components.

C. Use threaded steel concealed joint fasteners to align and secure adjoining cabinet units.

D. Secure removable panels with oval head screws with matching countersunk finishing washers.

E. Carefully scribe casework which is against other building materials, leaving gaps of 1/32 inch maximum. Do not use additional overlay trim for this purpose.

F. Secure fixed cabinet and counter bases to floor using appropriate anchorages.

G. Counter-sink anchorage devices at exposed locations used to wall mount components, and conceal with solid plugs of hardwood with finish to match surround. Finish flush with surrounding surfaces.

H. Install locks and hardware.

3.3 ADJUSTING

A. Adjust drawers, hardware, and other moving and operating parts to function smoothly and correctly.

B. Restore shop finish at exposed fasteners and where damaged during installation.

1. Restore in manner that results in cabinet surfaces showing no evidence of restoration.

2. Replace components on which finish restoration cannot be made to match shop finish.

3.4 CLEANING

A. Clean finished casework, shelves, hardware, fittings and fixtures in accordance with fabricator's instructions.

B. Ensure that washed surfaces do not differ from clean unwashed portions.

3.5 PROTECTION OF INSTALLED WORK

A. Protect completed work from damage until final acceptance.

END OF SECTION

SECTION 07 62 00

SHEET METAL TRIM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Miscellaneous sheet metal covers.

1.2 RELATED SECTIONS

A. Section 09 90 00 - Interior Painting: Prime and finish painting of sheet metal flashing and trim.

1.3 REFERENCES

A. ASTM A167 - Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.

B. ASTM A653 - Steel Sheet, Zinc-Coated, (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM B32 - Solder Metal.

D. ASTM B209 - Aluminum and Aluminum Alloy Sheet and Plate.

E. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.

F. ASTM B749 - Lead and Lead Alloy Strip, Sheet and Plate.

G. SMACNA - Sheet Metal and Air Conditioning Contractors National Association "Architectural Sheet Metal Manual."

H. SSPC - Structural Steel Painting Council.

1.4 SYSTEM DESCRIPTION

A. Work of this section is to provide sheet metal not specifically described in other sections of these specifications.

1.5 SUBMITTALS

A. Shop Drawings: Clearly indicate materials, configurations and profiles, jointing methods and locations, fastening methods and locations.

B. Setting Drawings or Templates: Submit setting drawings or templates and setting instructions for exact locations of items to be embedded in work of other sections.

C. Product Data: Submit manufacturer's literature completely describing manufactured products.

1.6 QUALITY ASSURANCE

A. Perform work in accordance with NRCA and SMACNA standard details and requirements.

1.7 QUALIFICATIONS

A. Fabricator and Installer: Company specializing in sheet metal flashing work with minimum 5 years documented experience.

1.8 STORAGE AND HANDLING

A. Deliver products to site, store handle and protect in accordance with manufacturer's instructions and recommendations.

B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials during storage which may cause discoloration, staining or damage.

1.9 FIELD MEASUREMENTS

A. Verify field measurements are as indicated on shop drawings.

1.10 COORDINATION

A. Ensure timely delivery of items to be embedded in work of other sections; furnish with setting drawings and templates.

1.11 WARRANTY

A. Installer's Warranty: Cover damage to work resulting from failure of work of this section to resist penetration of moisture for a period of 2 years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 SHEET MATERIALS

A. Galvanized Steel: ASTM A653; minimum 24 gauge core steel or as indicated on Drawings; minimum 1.25 oz/sq ft galvanized coating.

B. Aluminum: ASTM B209; minimum 0.062 inch or as indicated on Drawings; plain sheet; finish to match adjacent aluminum.

C. Stainless Steel: ASTM A167, Type 302; 18-8 alloy; mill rolled #2D finish; minimum 20 gauge thickness or as indicated on Drawings.

2.2 ACCESSORIES

A. Fasteners: Galvanized steel, aluminum, copper or stainless steel with soft neoprene washers at exposed fasteners; finish as follows:

1. Galvanized Steel: Galvanized steel or stainless steel.

2. Lead: Galvanized steel or stainless steel.

3. Aluminum: Aluminum or stainless steel.

4. Copper: Copper.

5. Stainless Steel: Stainless steel.

B. Protective Backing Paint: SSPC Paint 12; cold-applied asphalt mastic type; non-corrosive; compounded for 15 mil dry film thickness.

C. Solder: ASTM B32; 50/50 type.

2.3 FABRICATION

A. As far as practicable, form and fabricate sheet metal in shop. Where on-site fabrication is required, provide work equal to shop quality.

B. Fabricate required connection pieces.

C. Form sections square, true and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or appearance.

D. Solder metal joints. After soldering, remove flux. Wipe and wash solder joints clean.

2.4 FINISH

A. Back paint concealed metal surfaces and surfaces in contact with dissimilar metals and cementitious materials with protective backing paint to a minimum dry thickness of 15 mils.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION - SHEET METAL FLASHING

A. Conform to details indicated on Drawings and included in NRCA and SMACNA manuals.

B. Install shop fabricated sheet metal work in accordance with final reviewed shop drawings. Install manufactured assemblies in accordance with manufacturer's installation instructions.

C. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.

D. Install sheet metal work so as to adequately provide for expansion and contraction in finished work.

3.3 ADJUSTING

A. Replace damaged material with new undamaged material prior to final acceptance.

3.4 CLEANING

A. Clean sheet metal work; leave free from grease, finger marks and stains.

B. Remove scrap and debris from surrounding areas and grounds.

3.5 PROTECTION

A. Protect installed work of this section from defacement or damage until final acceptance.

END OF SECTION

SECTION 07 84 00

FIRESTOPPING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fireproof firestopping materials and accessories.

1.2 RELATED SECTIONS

A. Section 05 40 00 - Cold Formed Metal Framing: Interior non-load bearing stud partition framing.

B. Section 09 29 00 - Gypsum Board Systems: Gypsum wallboard fireproofing.

1.3 REFERENCES

A. UL - Underwriter's Laboratories, Inc.

B. UL 1479 - Through Penetration Firestops.

C. CBC - California Building Code, 2001 edition.

D. WHI - Warnock Hersey International, Inc.

1.4 SYSTEM DESCRIPTION

A. Firestopping Materials: UL 1479 capable of achieving fire rating noted in schedule at end of this section.

B. Firestop every penetration of walls, floor/ceiling assemblies and roof/ceiling assemblies including:

1. Pipes.

2. Ductwork without fire dampers, smoke dampers or smoke-fire dampers.

3. Wiring, raceways, cables and conduits.

4. Joints or openings in wall and between wall and other rated elements such as doors and ceilings.

5. Other locations indicated, specified, or required by codes and authority having jurisdiction.

1.5 SUBMITTALS

A. Shop Drawings: Indicate material installation details including reinforcement, anchorage and fastening.

1. Include schedule showing each firestopping material.

2. If required by officials having jurisdiction, submit shop drawings of each type of penetration indicating compliance with specified requirements.

B. Product Data: Provide data on product characteristics, performance and limitation criteria.

C. Test Reports: Submit complete test reports from independent laboratory attesting that firestopping materials and installation methods conform to ASTM E814 requirements.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum 3 years documented experience.

B. Applicator: Company specializing in performing the work of this section with minimum 3 years documented experience and approved by manufacturer.

1.7 REGULATORY REQUIREMENTS

A. Conform to CBC for fire resistance ratings and surface burning characteristics.

B. Through-Penetration Firestopping: Comply with CBC Sections 709.6 and 714.

C. Membrane Firestopping: Comply with CBC Sections 709.7 and 714.

D. Provide certificate of compliance from authority having jurisdiction indicating approval of combustibility.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site, store, handle and protect in accordance with manufacturer's instructions and recommendations.

B. Deliver materials in manufacturer's original unopened containers or packages with manufacturer's name, trade name, testing agency labels, product identification, lot numbers and application instructions.

C. Store materials in original unopened contains or packages under conditions recommended by manufacturers. Leave seals unbroken and labels intact until time of use.

D. Remove from project site rejected or damaged packages found unsuitable for use.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not apply materials when temperature of substrate material and ambient air is below 60 degrees F.

B. Maintain this minimum temperature before, during, and for 3 days after installation of materials.

C. Provide ventilation in areas to receive solvent cured materials.

1.10 SEQUENCING

A. Sequence work to permit firestopping materials to be installed after adjacent and surrounding work is complete.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Assembly Penetration Firestopping Systems:

1. Minnesota Mining & Manufacturing Co.

2. Other Manufacturers Offering Equal Products:

a. Grace Construction Products.

b. Hilti, Inc.

c. Specified Technologies, Inc.

d. Tremco.

e. United States Gypsum Company.

B. Construction Joint Firestopping Systems:

1. United States Gypsum Company.

2. Manufacturers Offering Equal Products:

a. Grace Construction Products.

b. Hilti, Inc.

c. Minnesota Mining & Manufacturing Co.

d. Specified Technologies, Inc.

e. Tremco.

C. Substitutions: Under provisions of Section 01 60 00.

2.2 FILL, VOID AND CAVITY MATERIALS

A. Assembly Penetration Firestopping Systems:

1. Firestopping Caulk: Latex-based intumescent type; endothermic; free from halogen and asbestos; non-sagging; fast drying; paintable; UL classified; 3M Brand "Fire Barrier" CP 25WB+ Caulk.

2. Firestopping Putty: 100 percent solids intumescent firestopping putty; permanently pliable; free from halogen and asbestos; stick or pad form as required by UL system listing; re-enterable; UL classified; 3M Brand "Fire Barrier" Moldable Putty.

3. Intumescent Wrap: Intumescent elastomeric material faced one side with aluminum or stainless steel foil; bearing UL classification marking; 3M Brand Fire Barrier Wrap/Strip FS 195.

4. Firestopping Composite Sheet: 100 percent solids intumescent firestopping sheet; thermally conductive; does not support flame; re-enterable; UL classified; 3M Brand "Fire Barrier" CS-195+ Composite Sheet.

B. Construction Joint Firestopping Systems:

1. Firestopping Mortar: Vinyl type mortar free from silicones, solvents, halogens, PCB's, asbestos and inorganic fibers; flame spread and smoke developed not to exceed 0 when tested in accordance with ASTM E84; easily repaired; fast setting; bonds to concrete, metals, wood and cable jackets without use of primers; red color; paintable; USG "Firecode" Compound.

2.3 FORMING MATERIALS

A. Assembly Penetration Firestopping Systems:

1. Fiber Type: Mineral wool; minimum 4.0 lbs/cu ft.

2. Foam Type: Foam backer rod.

B. Construction Joint Firestopping Systems:

1. Safing Insulation: ASTM C665, Type I; high-melt mineral-fiber insulation material; unfaced; nominal 4.0 lbs/cu ft; flames spread not to exceed 15 and smoke developed not to exceed 0 when tested in accordance with ASTM E84; thickness as required by UL system listing; USG Thermafiber Safing Insulation.

2.4 ACCESSORIES

A. Sleeves:

1. Steel Type: Cylindrical; gauge, seam lap, and length as required by UL system listing.

2. Wire Mesh Type: #8 steel wire cloth fabricated from galvanized steel wire that is 0.020 inch diameter by 1/8 inch on center in both directions.

B. Cover Plates and Strips: Sheet steel; gauge and dimensions as required by UL system listing.

C. Retaining Angles: Brake shape sheet steel angles; gauge and dimensions as required by UL system listing.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine openings and voids to be firestopped to determine if conditions are satisfactory for proper installation of firestopping.

B. Verify that building is properly enclosed or protected against adverse weather conditions.

C. Verify that supporting framing and surrounding construction is in thoroughly dry condition.

D. Do not begin installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare surfaces designated to receive firestopping in accordance with manufacturer's installation instructions.

B. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may effect bond of fire stopping material.

C. Remove incompatible materials which affect bond.

3.3 PROTECTION

A. Where firestopping is to be installed at location that will remain exposed in completed work, provide protection necessary to prevent damage to adjacent surfaces and finishes.

3.4 APPLICATION

A. Apply materials in accordance with manufacturer's instructions and UL System Design.

B. Apply firestopping material as required to achieve rating equal to that of the wall, floor/ceiling or ceiling/roof assembly in which firestopping is installed.

C. Install material at wall openings and floor/ceiling openings that contain penetrating sleeves, piping, ductwork, conduit and other items and voids requiring firestopping.

D. Install material at wall to floor/ceiling and wall ceiling intersections that require firestopping.

E. Use anchoring devices, back-up materials, clips, sleeves, supports and other materials used in fire tests for fire-stopping assembly.

F. Finish surfaces of firestopping that is to remain exposed in completed work to uniform and level condition.

3.5 FIELD QUALITY CONTROL

A. Maintain access to areas for firestopping work until completion of inspection by Project Inspector.

B. Project Inspector will inspect firestopping application to ascertain proper installation in full compliance with specified requirements.

3.6 ADJUSTING

A. Correct deficiencies in areas of firestopping prior to concealing or enclosing areas.

3.7 CLEANING

A. Remove spilled and excess materials adjacent to firestopping without damaging adjacent surfaces.

B. Leave finished work in neat, clean condition with no evidence of spillovers and damage to adjacent surfaces.

3.8 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.9 PROTECTION OF FINISHED WORK

A. Protect firestopping materials from damage until final acceptance.

3.10 SCHEDULE

A. Provide and install firestopping systems listed in schedule and shown on Drawings with accessories necessary to maintain fire resistance of assembly.

B. The schedule is a list of principal systems only. Refer to Drawing details for conditions requiring systems not specifically scheduled.

C. Penetrations Through 1-Hour Fire Rated Gypsum Board/Stud Wall Assemblies:

1. Steel Pipe up to 4 Inches in Diameter: UL System WL1001.

2. Steel Pipe up to 4 Inches in Diameter with up to 1-1/2 Inches of Insulation: UL System WL5001.

3. Flexible Metallic Conduit up to 1 Inch in Diameter: UL System WL1001.

D. Penetrations Through 1-Hour Fire and 2-Hour Rated Floor/Ceiling Assemblies:

1. Steel Pipe and Rigid Steel Conduit up to 2 Inches in Diameter: UL System FA1002.

2. Steel Pipe up to 4 Inches in Diameter with up to 1 Inch of Insulation: UL System FA5001.

3. Rigid Steel Conduit up to 2 Inches in Diameter: UL System FA1002.

4. Electric Metallic Conduit up to 2 Inches in Diameter: UL System FA1002.

5. Individual Cables or Cables in Tight Bundles Having up to 2 Inch Diameter: UL System FA3001.

E. Construction Joints:

1. Joint at Head of 1-Hour Fire Rated Gypsum Board/Stud Wall Assemblies to Concrete Filled Fluted Steel Deck Floor or Roof Assembly: UL System HWD0001.

END OF SECTION

SECTION 08 11 00

HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

A. This section includes hollow metal products as specified and as shown in the Contract Drawings.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

A. Hollow metal doors, swinging type.

B. Hollow metal frame, swinging type.

1.3 RELATED PRODUCTS FURNISHED BY OTHERS BUT NOT SPECIFIED IN THIS SECTION

A. Door hardware.

1.4 RELATED SECTIONS

A. Section 08 71 00 - Door Hardware.

B. Section 09 90 00 - Interior Painting.

1.5 REFERENCES

A. ANSI A115.1 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.

B. ASTM A355 - Specification for Steel, Carbon, Cold-Rolled Sheet, Commercial Quality.

C. ASTM A526/A526M - Specification for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.

D. ASTM A5699 - Specification for Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip, Commercial Quality.

E. ASTM B117 - Method of Salt Spray (Fog) Testing.

F. ASTM D1735 - Practice for Testing Water Resistance of Coating Using Water Fog Apparatus.

G. NAAMM - Hollow Metal Manual.

H. Manufacturer's Standard Gage and Galvanized Sheet Gage.

1. ANSI - American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

2. ASTM - American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103

3. UL - Underwriters Laboratory, 333 Pfingsten Road, Northbrook, IL 60062

1.6 TESTING AND PERFORMANCE

A. Performance Test for Steel Doors and Hardware Reinforcing (ANSI A151.1).

1. The test specimen shall b a 3'-0" x 7'-0" normal size 1-3/4 inch door.

2. The specimen shall be tested in accordance with the ANSI A151.1 procedure for the level A doors (1,000,000 cycles).

3. The specimen shall be tested in accordance with the ANSI A151.1 procedure for twist test which requires a maximum pressure of 300 lbs.

1.7 QUALITY

A. Manufacturer's Qualifications: Manufacturer shall provide evidence of having personnel and plant equipment capable of fabricating hollow metal door and frame assemblies of the type specified herein.

B. Quality Criteria:

1. All door and frame assemblies shall meet the requirements of paragraph 1.6 of these specifications.

2. Fabrication methods and product quality shall meet the standards set by the Hollow Metal Manufacturers Association, HMMA, a Division of the National Association of Architectural Manufacturers, NAAMM, as set forth in these specifications.

1.8 OPERATION AND MAINTENANCE DATA

A. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

B. Provide instructions for continued adjustment, maintenance, and removal and replacement of door hardware by Owner's personnel.

1.9 SUBMITTALS

A. Submittal Drawings:

1. Show door and frame elevations and sections.

2. Show listing of opening descriptions including location, gages and anchors.

3. Show location and details of all openings.

1.10 WARRANTY

A. All hollow metal work shall be warranted from defects in workmanship and quality for a period of one (1) year from shipment.

PART 2 PRODUCTS

2.1 HOLLOW METAL DOORS

A. Materials:

1. Doors shall be made of commercial quality, level, cold rolled steel conforming to ASTM A366 or hot-rolled, pickled and oiled steel conforming to ASTM A569 and free of scale, pitting or surface defects.

2. Interior Doors: Face sheets shall be not less than 20 gage.

B. Construction:

1. All doors shall be of the types and sizes shown on approved submittal drawings and shall be as constructed in accordance with the specifications and meet the performance requirements of Section 1.6.

2. Door face sheets shall be joined at their vertical edges with no visible seams on their faces. Minimum door thickness shall be 1-3/4 inch.

3. Face sheets shall be stiffened by continuous vertical formed steel sections which, upon assembly, span the full thickness of the interior space between the door faces. These stiffeners shall be not less than 22 gage, spaced so that the vertical interior webs shall be no more than 6 inches apart and securely fastened to both face sheets by spot welds spaced at a maximum of 5 inches oc vertically. Spaces between stiffeners shall be filled with fiberglass or mineral rockwool batt-type material.

4. Door edges to be constructed in the following method: Door faces shall be joined together of their vertical edges by a continuous weld extending the full height f the door. All such welds to be ground, filled and dressed smooth to make then invisible and provide a smooth flush surface.

5. Top and bottom edges of all doors shall be closed with continuous steel channels not less than 16 gage, spot welded to both faces.

6. Edge profiles shall be provided on both vertical edges of doors as follows:

   a. Single-Acting Swing Doors: Beveled 1/8 inch in 2 inches.

7. All hardware furnished by the hardware contractor for single-acting doors shall be designed for beveled edges as specified herein.

8. Hardware Reinforcements:

   a. Doors shall be reinforced and tapped at the factory for fully cylindrical lock-set only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.

   b. Minimum gages for hardware reinforcing plates shall be as follows:

      1) Full mortise hinges and pivots - 7 gage.

      2) Replacements for lock face, flush bolts - 14 gage.

9. Finish: After fabrication, all tool marks and surface blemishes shall be filled and sanded as required to make both faces and both vertical edges smooth and free from irregularities. After appropriate preparation, all exposed surfaces shall receive a rust inhibitive primer which meets or exceeds ASTM D1735 water fog test for organic coatings for 200 hours and which is fully cured prior to shipment.

2.2 HOLLOW METAL FRAMES

A. Materials:

1. Interior Openings: Frames shall be either commercial grade cold-rolled steel conforming to ASTM A366 or commercial grade hot-rolled and pickled steel conforming to ASTM A569. Metal thickness shall be not less than 16 gage for frames that received hollow metal doors.

B. Design and Construction:

1. All frames shall be welded units with integral trim, of the sizes and shapes shown on approved shop drawings.

2. All finished work shall be strong and rigid, neat in appearance, square, true and free of defects, warp or buckle. Molded members shall be clean cut, straight and of uniform profile through their lengths.

3. Jamb and head profiles shall be in accordance with the frame schedule and as shown on the approved submittal drawings.

4. Corner joints at welded corners shall have all contact edges closed tight, with trim faces mitered and continuously welded, and stops mitered or butted.

5. Frames are to be anchored at the bottom of each jamb. Additional pressure fit type anchors are to be furnished at the mitered corners.

6. Minimum depth of stop shall be 5/8 inch.

7. When stripping limitations so dictate, frames for large openings shall be fabricated in sections designed for assembly in the field by others. Alignment plates or angles shall be installed at each joint. Such components shall be the same gage thickness as the frame. Field joints shall be made in accordance with approved submittal drawings and shall be welded by others.

8. Hardware Reinforcements:

   a. Frames shall be mortised, reinforced, drilled and tapped at the factory for fully templated mortised hardware only, in accordance with approved hardware schedule and templates provided by the hardware contractor. When surface mounted hardware is to be applied, frames shall have reinforcing plates only, all drilling and tapping shall be done by others.

   b. Minimum thickness of hardware reinforcing plates shall be as follows:

      1) Hinge: 7 gage x 1-1/4 inch x 10 inches minimum size.

      2) Strike Reinforcements: 12 gage or a 16 gage.

9. Jamb Anchors:

   a. Welded frames for installation in stud partitions shall be provided with steel anchors of suitable design, not less than 18 gage thickness, secured inside each jamb as follows:

      1) Frames up to 60 inches height: 2 anchors.

      2) Frames greater than 60 inches up to 90 inches: 4 anchors.

      3) Frames greater than 90 inches up to 96 inches: 5 anchors.

      4) Frames greater than 96 inches: 5 anchors plus one for each 24 inches or fraction thereof over 96 inches spaced at 24 inch maximum between anchors.

10. Finish: After fabrication, all tool marks and surface imperfections shall be removed and exposed faces of all welded joints shall be dressed smooth. Frames shall be treated to insure maximum paint adhesion and shall be coated on all accessible surfaces with a rust inhibitive primer which meets or exceeds ASTM B117 salt spray for 150 hours, and ASTM D1735 water fog tested for organic coatings for 200 hours and which is fully cured prior to shipment.

2.3 CLEARANCES AND TOLERANCES

A. Edge clearances shall not exceed the following:

1. Between doors and frames at head and jambs: 3/16 inch.

2. Between edges of pairs of doors: 3/16 inch.

3. At door sills where no threshold is used: 3/4 inch max.

B. Manufacturing tolerance shall be maintained within the following limits:

1. Frames for single doors or pair of doors:

a. Width, measured between rabbets at the head: Nominal opening width +1/16 inch, -1/32 inch.

b. Height (total length of jamb rabbet): Nominal opening height +3/64 inch.

2. Doors:

a. Width: +3/64 inch.

b. Height: +3/64 inch.

c. Thickness: +3/64 inch.

d. Hardware Cutout Dimensions: Template dimensions +0.015', -0".

e. Hardware Location: +1/32 inch.

2.4 HARDWARE LOCATIONS

A. The location of hardware on doors and frames shall be as listed below:

B. Hinges:

1. Top: 5 inches from head of frame to top of hinge.

2. Bottom: 10 inches from finished floor to bottom of hinge.

3. Intermediate: Centered between top and bottom hinges.

4. Unit and Integral:

a. Type locks and latches: 38 inches to centerline of knob.

b. Deadlocks: 48 inches to centerline of strike.

PART 3 EXECUTION

3.1 SITE STORAGE AND PROTECTION OF MATERIALS

A. The Contractor responsible for installation shall remove wraps or covers from doors and frames upon delivery at the building site. The contractor responsible for installation shall see that any scratches or disfigurement caused by shipping or handling are promptly cleaned and touched up with a rust inhibitive primer.

B. The contractor responsible for installation shall see that materials are properly stored on planks or dunnage in a dry location. Doors shall be stored in a vertical position spaced by blocking.

3.2 INSTALLATION

A. The contractor responsible for installation shall perform the following:

1. Prior to installation, all frames must be checked and corrected for size, swing, squareness, alignment, twist and plumbness. Permissible installation tolerances shall not exceed the following:

   a. Squareness: +1/16 inch measured on a line, 90 degrees from one jamb, at the upper corner of the frame at the other jamb.

   b. Alignment: +1/16 inch measured on jambs on a horizontal line parallel to the plane of the wall.

   c. Twist: +1/16 inch measured at the face corners of jambs on parallel lines perpendicular to the plane of the wall.

   d. Plumbness: +1/16 inch measured on the jamb at the floor.

B. Proper door clearances must be maintained in accordance with 2.3 of these specifications, except for special conditions otherwise noted. Where necessary, metal hinge shims, furnished by the Contractor responsible for installation, are acceptable to maintain clearances.

C. Hardware must be applied in accordance with hardware manufacturer's templates and instructions.

D. Exposed field welds shall be finished smooth and touched up with a rust inhibitive primer.

END OF SECTION